

REMARKS

Claims 1-3 are now pending in this application for which applicant seeks reconsideration.

Amendment

Claims 1-3 have been amended to improve their form, readability, and clarity. In this respect, the claims now clearly call for an array speaker system that drives the center speaker unit and the peripheral speaker units at different weights depending on the frequency components. No new matter has been introduced.

Art Rejection

Claim 1 was rejected under 35 U.S.C. § 103(a) as unpatentable over Tanaka (JP 5-103391) in view of Sasaki (JP 9-233591) and Thiel (USP 7,003,124). Claim 2 was rejected under § 103(a) as unpatentable over Tanaka in view of Sasaki and Satoh (USP 5,146,507). Claim 3 was rejected under § 103(a) as unpatentable over Tanaka in view of Sasaki, Doidic (USP 5,789,689), and Thiel. Applicant traverses these rejections because the combinations urged by the examiner would not have disclosed or taught driving the center speaker unit and the peripheral speaker units at different weights depending on the frequency components, as set forth in original claims 1-3.

Original claims 1-3 each call for imparting weights differently between the center speaker unit and the peripheral speaker units depending on the frequency components. Specifically, these claims call for reducing the weight differences between the weight imparted to the center speaker unit and the weights imparted to the peripheral speaker units in the array speaker with respect to low-frequency components of input audio signals in comparison with differences between the weights applied to high-frequency components.

Tanaka indeed appears to disclose driving the central speakers at a higher level than the peripheral speakers. Tanaka, however, is silent regarding driving different frequencies at different levels between the central speakers and the peripheral speakers. In this respect, the examiner relied upon Thiel for the proposition that driving different types of speakers at different levels would have been obvious. Applicant disagrees for the following reasons.

Thiel discloses that speakers in a typical stereo system do not have a uniform frequency response in the lowest parts of the audible sound range. Thus, different speakers having a desired frequency response for a given frequency range are used to handle different frequency components of the sound range. Thiel at best discloses a way of compensating the output loss occurring at the crossover between a subwoofer frequency range and a main speaker unit

frequency range. Thiel discloses nothing in the way of imparting different weights between the central speakers and the peripheral speakers. Moreover, applicant notes that the subwoofer is merely designed to drive only the lowest-frequency components. Indeed, the crossover prevents the subwoofer driving the mid-frequency and the high-frequency components. Accordingly, Thiel teaches away from having all speakers, namely the center speaker and the peripheral speakers, being driven across all the frequencies. Accordingly, applicant submits that the combination urged by the examiner would not have taught claims 1 and 3.

Moreover, claim 3 further calls for not applying time differences to the speaker units for the low-frequency components. Applicant submits that the combination urged by the examiner also would not have disclosed or taught applying time differences to the speaker units for only the intermediate and high frequency components as set forth in claim 3.

In rejecting claim 2, the examiner relied upon Satoh instead of Thiel for the proposition that driving the center speakers at the same level as the peripheral speakers would have been obvious as Satoh teaches processing the signals for the all channels the same weight. Applicant again disagrees for the following reasons.

Even if Satoh were to disclose driving all the channels at the same level, for argument's sake, Satoh still would not have disclosed or taught driving different frequency components at different levels depending on the position of the speakers. Note that claim 2 calls for imparting relatively larger weights at the center speaker units than the peripheral speaker units for the high-frequency components of the input audio signals, while driving the low-frequency components at the same weight for all the speaker units. Accordingly, applicant submits that the combination urged by the examiner also would not have disclosed or taught claim 2.

Conclusion

Applicant submits that none of the applied references would have disclosed or taught claims 1-3 simply because none of the applied reference disclose an array speaker system that drives the center speaker unit and the peripheral speaker units at different weights depending on the frequency components. Claims 1-3 are in condition for allowance. Should the examiner have any issues concerning this reply or any other outstanding issues remaining in this application, applicant urges the examiner to contact the undersigned to expedite prosecution.

Respectfully submitted,

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DATE

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